

# development concept plan

february 1980

## SEQUOIA AND KINGS CANYON

GIANT FOREST / LODGEPOLE



NATIONAL PARKS / CALIFORNIA

RECOMMENDED:

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November 5, 1979

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Sequoia and Kings Canyon National Parks

January 2, 1980

APPROVED:

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January 17, 1980

The final environmental statement prepared concurrently with this plan is an integral part of the plan and should be consulted for additional details on proposed actions, mitigating measures, and further compliance procedures.

**DEVELOPMENT CONCEPT PLAN**

**GIANT FOREST/LODGEPOLE AREA OF**

**SEQUOIA AND KINGS CANYON NATIONAL PARKS**

**United States Department of the Interior**  
**National Park Service**



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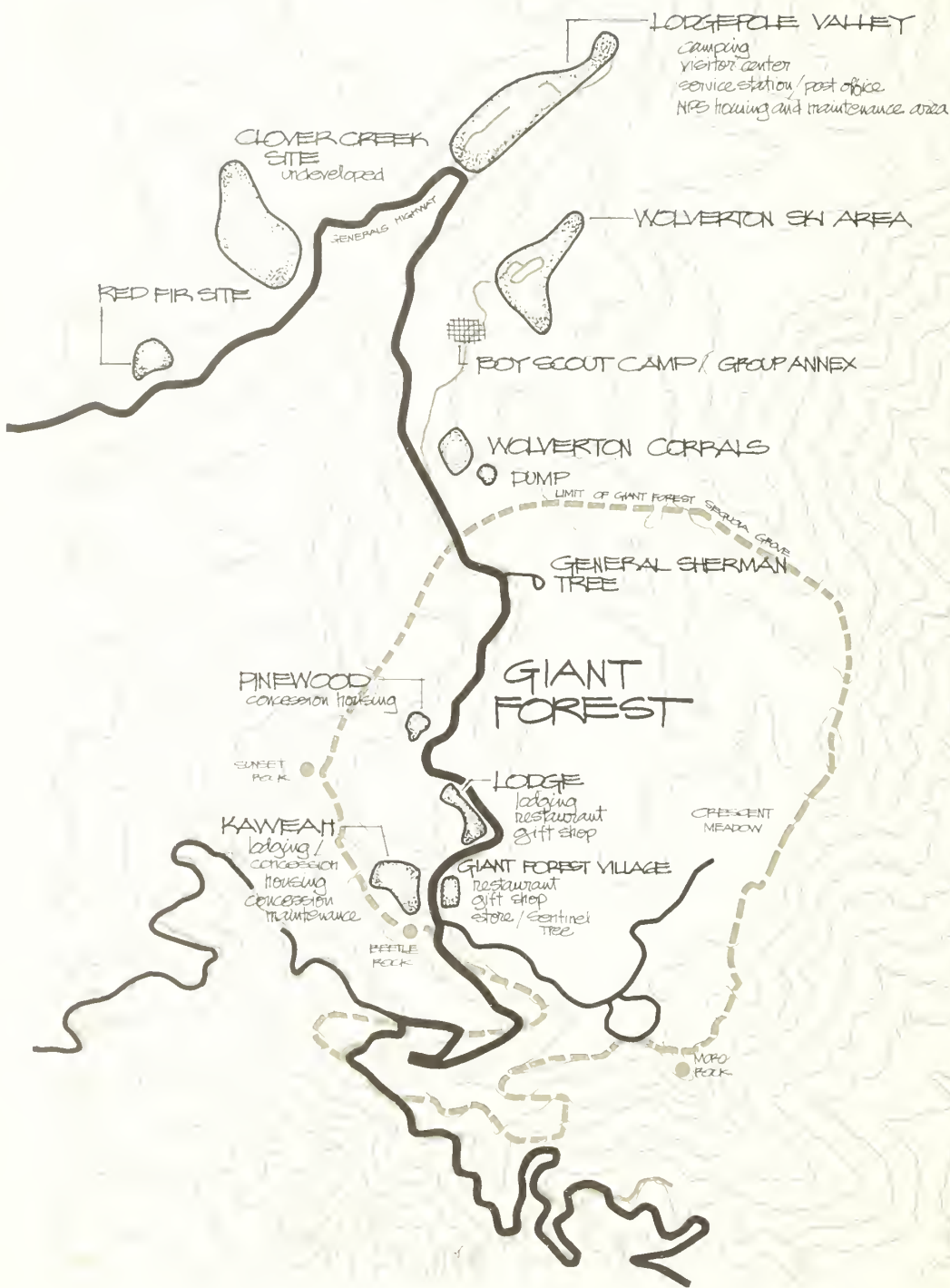
## DESCRIPTION OF THE STUDY AREA

The Giant Forest/Lodgepole study area contains approximately 30,000 acres, centrally located within the Sequoia and Kings Canyon park complex. The study area, actually within Sequoia National Park, is 16 miles northeast of the Ash Mountain entrance station and 32 miles southeast of the Big Stump entrance. The Generals Highway from Big Stump to the study area is along gentle gradients, with adequate pullouts, small streams, and several vistas to add variety to the drive. In contrast, the highway from Ash Mountain is generally winding and steep.

Elevations in the study area range from 5,500 to over 10,000 feet. The climate is characterized by warm, dry summers and moderately cold, wet winters. Over 90 percent of the annual precipitation falls during October through April, mostly in the form of snow. Summer sees little rainfall, except for isolated thunderstorms.

The study area lies almost entirely within a mixed conifer forest. Red fir, white fir, sugar pine, ponderosa pine, lodgepole pine, incense cedar, and giant sequoia are the main conifers, with black oak, dogwood, and small islands of aspen the predominant deciduous trees. Soils in the study area range from morainal deposits to sandy loam soils. Examples of the larger wildlife found on site are the black bear and California mule deer. Chipmunks, ground squirrels, and other small rodents are commonly seen.

Of course, the outstanding natural resource in the study area is the giant sequoia. The entire Giant Forest grove, comprising about 1,800 acres with some 18,600 sequoia trees, is included in this study area. While not the largest grove of giant sequoias within the park, it nevertheless is the site of the largest living thing on this planet, the General Sherman Tree.



# GIANT FOREST

## EXISTING CONDITIONS

SEQUOIA & KINGS CANYON NATIONAL PARKS  
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE



## PURPOSE OF THE PARK

Sequoia National Park, by its establishing act of September 25, 1890, was "dedicated and set apart as a public park, or pleasuring ground, for the benefit and enjoyment of the people" and "for the preservation from injury of all timber, mineral deposits, natural curiosities or wonders" and "their retention in their natural condition." The primary purpose for establishment, the preservation of park forests (especially sequoia forests), is set out in the act's preamble: "The rapid destruction of timber and ornamental trees in various parts of the United States, some of which trees are the wonders of the world on account of their size and limited number growing, makes it a matter of importance that at least some of said forests should be preserved."

Sequoia and Kings Canyon National Parks were established because of the unique values of all their natural resources, but especially because of their wilderness character and vegetation, with emphasis on giant sequoia forests. The parks were also established to preserve the beauty of the parks for future generations to experience. Consequently, visitor use and development must be such that impacts upon the natural resources are minimized to the greatest extent possible.

## MANAGEMENT OBJECTIVES

Through interpretation of the legislative mandate and as guidance to the future operation of and planning for the parks, the following management objectives\* have been approved.

Restore and/or maintain the natural ecosystems of these parks as they were prior to the advent of European man.

Provide quality opportunities for visitor understanding, compatible use, and enjoyment of the park's resources.

Emphasize the remarkable giant sequoia trees and the spectacular High Sierra wilderness as main interpretive themes.

Identify, preserve, and interpret important natural, historical, or archaeological features found in these parks.

Maintain all facilities, both National Park Service and concession, in accordance with applicable public health and safety standards.

Limit National Park Service and concession development to that necessary and appropriate for the public use and enjoyment of these parks; and eliminate or relocate facilities that intrude on the primary resources.

Relocate development within Giant Forest to a less sensitive area.

Visitor overnight accommodations provided by the concessioner will not exceed 2,000 visitors per night (pillows) in both parks, and those provided in the Giant Forest/Lodgepole developed area will not exceed 1,240.

Campsites will not exceed 1971 levels or 1,700 for both parks.

The Wolverton ski area will be maintained as a family-type area with only moderate upgrading to provide for visitor safety. Additional ski areas will not be developed.

Insure that concessioner accommodations are provided in a price range that will best serve all park visitors.

It is with this guidance that an examination of existing problems can be made and the next step toward resolution of such taken.

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\*Only selected management objectives are provided here. For a complete list, consult the *Sequoia and Kings Canyon National Parks Statement for Management*.

## PROBLEM STATEMENT

Sequoia National Park was established to “perpetuate the environment in a natural state for the benefit and enjoyment of the people.” Giant sequoias, as the prime resource, require protection from both direct impacts and alteration of key environmental conditions that affect the vigor of mature trees and the regeneration potential of the species.

The necessity for an examination of development patterns and locations in the Giant Forest/Lodgepole area has been evident for some time. Correspondence from park superintendents, dating back to the 1930s, indicates a continuing concern over the location of major development within the sequoia groves. It has been apparent that neither the interest of species preservation nor the interests of the visitors are best served by locating development in Giant Forest.

The slow, winding approach roads and the distances to other potential development areas preclude eliminating visitor services and management facilities from the Giant Forest/Lodgepole area. The approved master plan and statement for management recognize the need to provide these essential services in close proximity to the Giant Forest.

Giant sequoias have been subjected to direct injury from previous construction. Root systems have been pruned and covered with pavement. The use of existing facilities also has adversely affected the trees. Small feeder roots have been eliminated in areas of heavy foot traffic, and young sequoias are subjected to vandalism in areas of high use.

Research efforts have shown that soil moisture availability is a critical factor in seed germination and early growth of sequoia trees. Conditions that alter the soil moisture regime, such as roads, buildings, parking lots, and areas of compacted soils, adversely affect the potential for successful regeneration of the species.

Fire suppression, which must be practiced in developed areas, also adversely affects the ecological conditions necessary for the sequoias. Fire creates an altered substrate and more open forest floor, enabling a greater percentage of



sequoia seedlings to survive. In the absence of natural fires, white fir has increased in the forest composition, and thus sequoia reproduction is reduced.

Due to the proximity of the trees to buildings, the giant sequoias pose hazards to visitors and structures. It is a natural process for giant sequoias to drop their large branches, and trees have fallen under such conditions as strong winds or unequal snow weight.

Because of major development within the boundary of this sequoia grove, management techniques for the best protection of the prime resource are not feasible. Development directly impacts the trees, the trees pose a hazard to structures and visitors, and the ability of the grove to perpetuate itself is severely hampered. A relocation of major development from the Giant Forest area is a prime objective of planning in the study area.

A second problem within the study area is the inadequacy of present sewage treatment facilities and the dilapidated condition of the physical plant — primarily buildings and utilities. Few structures that house visitors or employees meet accepted building and safety codes. The same is true of structures associated with such activities as food service and downhill skiing. A severe pollution problem results from inadequate sewage treatment at Giant Forest and Lodgepole. Both sewage treatment systems are overloaded and provide only primary treatment. Areas surrounding sewage spray field disposal sites are severely impacted; direct contamination of the Marble Fork of the Kaweah River is a strong possibility. Existing standards of sewage treatment violate local, state, and federal codes to the extent that these developed areas could be closed to public use.

The random distribution of development and its aged condition necessitate excessive expenditures for maintenance and may provide less than desirable visitor experiences. A larger number of employees than normally needed for an operation of this scale are required due to the nature and physical condition of facilities. This in turn increases congestion and demands upon the resource.

A third problem in the study area is a lack of comprehensive and continuous interpretive experiences for visitors. The Lodgepole visitor center is removed from the general flow of visitor traffic. National Park Service presence is inadequate in the Giant Forest, an important hub of visitor activity, thereby shifting the informational function to the concession staff. A visitor must now exert considerable effort to obtain an accurate picture of the range of activities and opportunities available to him in the area.

## PREVIOUS PLANNING / PUBLIC INVOLVEMENT

Several previous planning efforts for Sequoia and Kings Canyon National Parks provide direction to the current development concept plan for Giant Forest/Lodgepole. Resource preservation and improved interpretive experiences for visitors were established as paramount goals for the study area in a master plan for both parks (approved 1971). The master plan confirms the appropriateness of visitor lodging in the study area and proposes definite lodging ceilings for the area.

Early work in the study area produced a preliminary plan that was publicly reviewed in August 1974. Public input indicated acceptance of proposals for the removal of major development from prime resource areas within Giant Forest. The use of transportation systems to minimize private vehicular traffic and as access to Giant Forest for interpretive means was also widely accepted. However, questions were raised about the location, type, and number of campsites to be provided in the study area and the locations, character, and distribution of concession facilities. A series of four alternative plans were developed in response to public concerns at Giant Forest/Lodgepole. Public meetings on these alternatives were held in July 1975.

Public meeting input, park staff operating experience, natural and social science environmental impact analysis, data from a visitor survey (summer and fall 1975), and planning expertise were combined to formulate a recommendation for the study area. Concepts and proposals were drawn from considerations in each of the four alternatives. The draft plan, its rationale, and a synopsis of the analytic decision-making process follow.

## SITE ANALYSIS

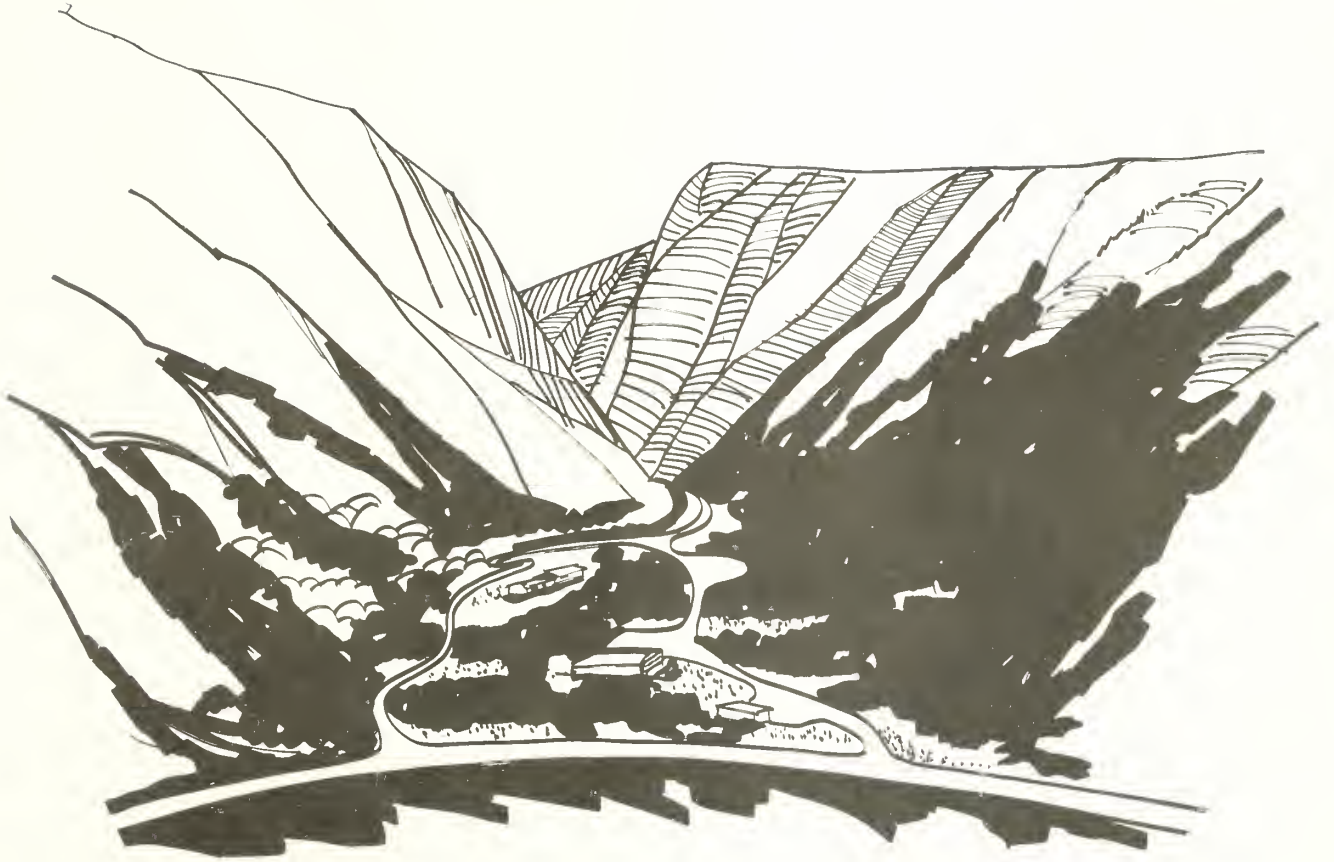
The planning team examined the land base capable of absorbing those functions to be phased out of Giant Forest – visitor lodging and associated services, day use parking, and employee housing. Three primary locations – Wolverton ski area, Lodgepole, and Clover Creek – were analyzed for their capability to accommodate these major development items. The following graphics and written material highlight natural features of each site that provide both aesthetic interest as well as constraints on development.

### LODGEPOLE

Lodgepole is a readily accessible, intensely used glaciated valley. The site is enclosed by boulder-covered vegetated slopes and becomes increasingly narrow the further one penetrates. Upper reaches of the valley provide significant bear habitat. The prime feature of the site is the Marble Fork of the Kaweah River, the largest stream in the study area. The valley floor is occupied by scattered mature lodgepole and Jeffrey pine with little understory and large granitic boulders. Numerous man-made facilities (roads, utility systems, buildings, and campsites) occupy most of the spaces suitable for development.

There are a number of natural restrictions on development in Lodgepole. Valley walls have some rockslide potential and pose limitations on construction activities that would disturb slope stability. The river undergoes periodic spring flooding, and its banks are continually eroding from heavy visitor use. The large boulders on the valley floor decrease space for development. Intensive use of the valley floor over the years has compacted soils, damaged remaining lodgepole pine, and inhibited revegetation of the site. Over time, diseased and otherwise damaged vegetation has been removed from the site. Since little natural regeneration of the lodgepole forest has taken place, the valley has become increasingly barren.





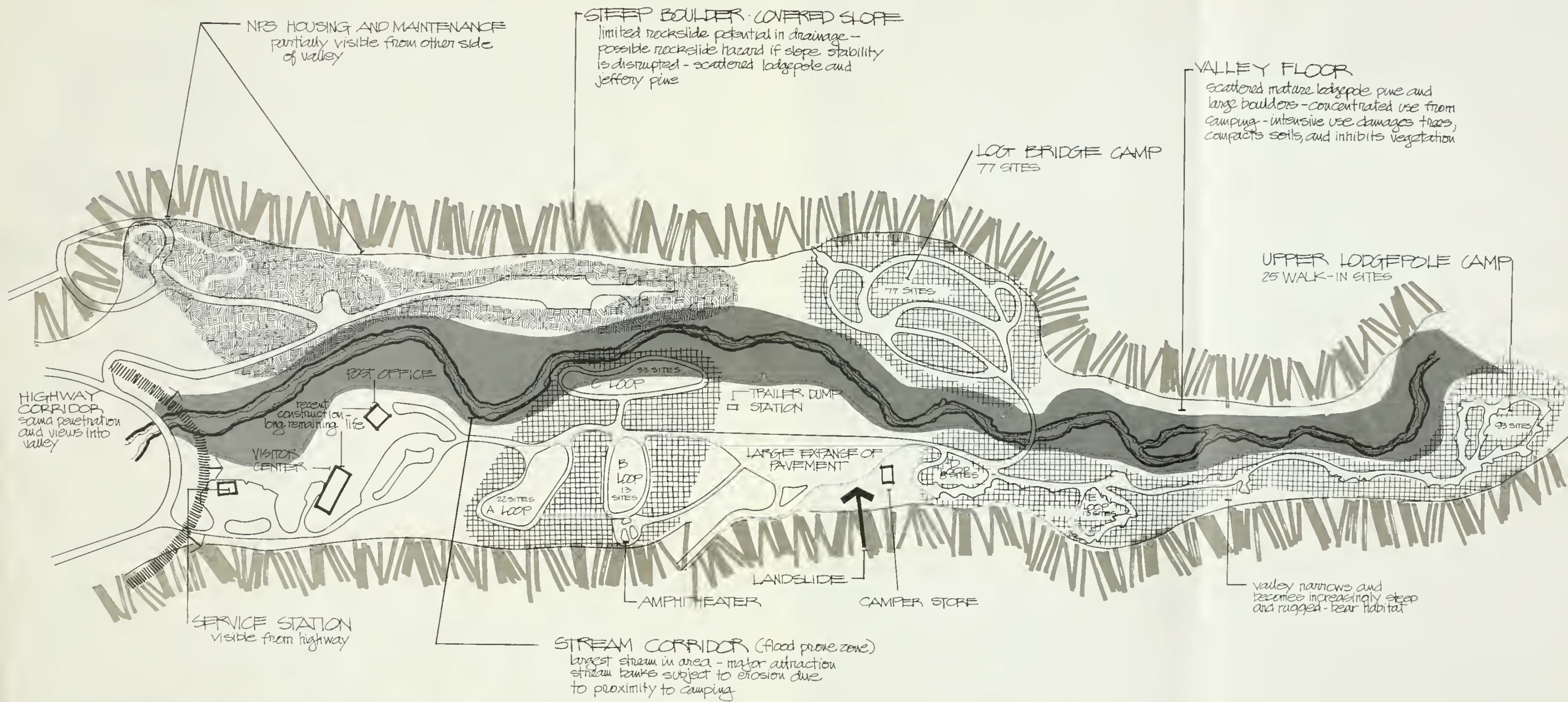
# LODGEPOLE

CLASSIC VALLEY CORRIDOR

MAJOR WATER FEATURE  
EASY ACCESS  
LEVEL TERRAIN  
DRY ENVIRONMENT  
CENTRAL LOCATION ALONG  
GENERALS HIGHWAY







# LODGEPOLE VALLEY

## EXISTING CONDITIONS - SITE ANALYSIS

SEQUOIA & KINGS CANYON NATIONAL PARKS  
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

 CAMPING ZONE  
 FLOOD-PRONE ZONE



0 100 200 FEET

102-40038A  
DEC 76



## WOLVERTON SKI AREA

Wolverton ski area is a bowl-shaped valley with meadows and riparian vegetation at its focus. The open, sunny atmosphere provides a pleasant contrast to the surrounding dense fir forest. The diversity of vegetation types and the "edge effect" as the meadow meets the fir forest provide rich wildlife habitat. Views of the high country can be obtained through short hikes up the existing ski slopes. The site is easily accessible, yet somewhat removed from the influence of Generals Highway traffic. A major trailhead for backcountry access is included in the area.

The meadow environment (especially vegetation) is very susceptible to change by activities (development and use) that alter groundwater hydrology. Soils on the gentle open slopes of the bowl are thin with sparse ground cover and have a high erosion potential. Alteration of steep slopes can disturb groundwater flows into the meadow, and cuts in these soil types are difficult to revegetate and thereby stabilize. Soils in the drier portions of the meadow are subject to compaction and consequent changes in vegetation. Because of the open nature of the site, development activities are very visible.





# WOLVERTON

## BOWL-SHAPED VALLEY

OPEN, SUNNY SLOPES SURROUNDING  
MEADOW AND RIPARIAN ENVIRONMENTS

- SERENE AND RESTFUL

CLOSE TO GIANT FOREST

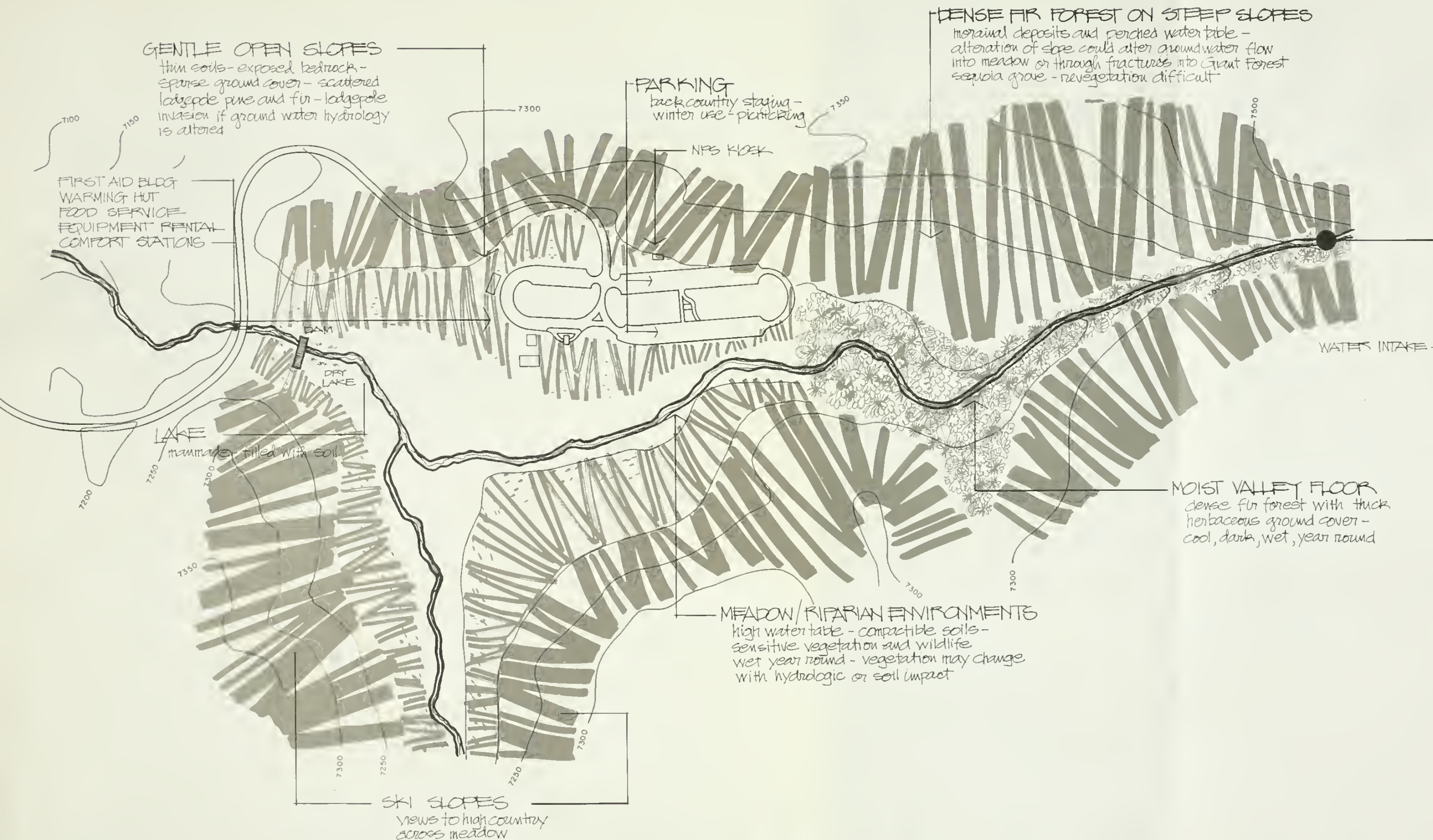
VEGETATION DIVERSITY

BACKCOUNTRY THRESHOLD

PLEASANT CONTRAST TO SURROUNDING

DENSE FOREST ENVIRONMENT

ACCESSIBLE BUT AWAY FROM INFLUENCE  
OF HIGHWAY



# WOLVERTON SKI AREA

## EXISTING CONDITIONS - SITE ANALYSIS

SEQUOIA<sup>3</sup>/<sub>16</sub> KINGS CANYON NATIONAL PARKS

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE



0 200 FEET

102 | 40052  
DEC | JULY 76

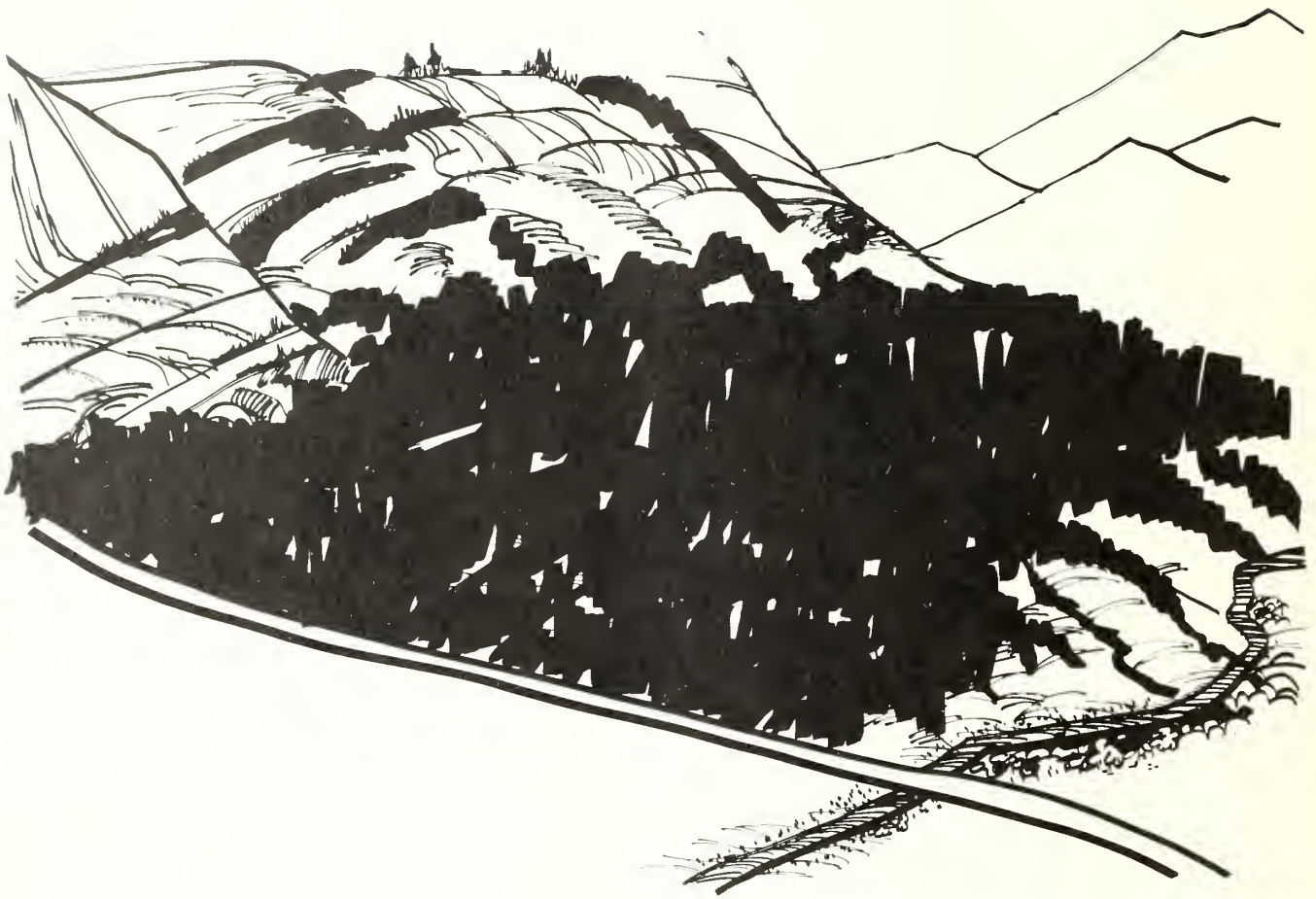




## **CLOVER CREEK**

The Clover Creek site is a presently undeveloped sidehill terrace away from the influence of the Generals Highway. It contains a variety of environments ranging from dense fir forest, to wet fern-covered swales, to open sunny slopes with granite outcroppings and manzanita, to stream corridor. Wildlife is relatively abundant across the site, which offers some excellent views of the high country.

The site has primarily uniform slopes with scattered level areas of less than 10-percent slope (see graphic). The fir forest is a mixed-age stand on deep soils with a high growth potential. Selective removal of trees and other vegetation would be required to accommodate development, and mature, hazardous trees would also be removed. Road access would require cutting across steep terrain and into exposed granitic bedrock.



# CLOVER CREEK

SIDEHILL TERRACE FACING HIGH COUNTRY

DENSE, MIXED-AGE FOREST

- HIGH REGENERATION
- COOL, MOIST
- FILTERED SUNLIGHT
- VISUAL SCREENING / SOUND ABSORPTION

AWAY FROM INFLUENCE OF HIGHWAY

MORNING SUN ASPECT

VIEWS OF HIGH COUNTRY

STREAM ENVIRONMENT

VARIETY OF ENVIRONMENT



# CLOVER CREEK

## EXISTING CONDITIONS - SITE ANALYSIS

SEQUOIA<sup>TM</sup> & KINGS CANYON NATIONAL PARKS

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE



0 100 FEET

	0-10% -	SUITABLE FOR CAMPING/LODGING
	10-20% -	SUITABLE FOR LODGING
	20%+ -	UNSUITABLE FOR DEVELOPMENT





## THE PLAN

The plan for the Giant Forest/Lodgepole study area consists of several primary actions related to visitor lodging and associated services, camping, employee housing, parking, and circulation. An overview of proposed actions for each development site is as follows:

In keeping with the National Park Service mandate to preserve and perpetuate the giant sequoia, **Giant Forest** will be converted to a day use area over an approximate 10-year span. Most development will be relocated and the area returned to its natural state. Day use parking currently scattered throughout the Giant Forest area will be consolidated in a parking/information structure at Wolverton corrals. A transportation system utilizing existing roadways will be initiated to reduce both private vehicle use in Giant Forest and the continual flow of traffic on the Generals Highway.

The **Wolverton** ski area, due to the fragile nature of its High Sierra meadow setting, will remain essentially unchanged. Rope tows will be upgraded to improve visitor safety.

Considering its outstanding natural features, and in the interest of economic efficiency, **Lodgepole** will continue to function as the camping center. An extensive program of campground redesign and resource stabilization will be conducted.

To provide a visitor lodging experience at one location with sufficient land base and site amenities to recreate the dispersed character existing at Giant Forest, **Clover Creek** will be developed for visitor lodging and associated services.

To keep most employees close to their work and in a compact yet modern housing complex, concession employees will be housed at **Clover Creek**; National Park Service employees will live at **Lodgepole**.

**Red Fir** will serve as the location for both National Park Service and concession maintenance facilities.

To meet mandatory health and safety codes, existing sewage handling facilities at **Giant Forest** will be upgraded to serve during the phase-out period. The ultimate treatment plant to serve the new development will be located at **Clover Creek**, with effluent disposal southwest of the Red

Fir site. The interim Giant Forest sewage system will then be phased out; remaining comfort stations will be converted to self-contained units.

Specific actions and their rationale for each development zone are described in the following section.

## GIANT FOREST

Giant Forest is currently used for a visitor lodging and service base, a backcountry trailhead (Crescent Meadow), employee housing, concession maintenance, and sewage treatment and disposal. These land uses take place in the midst of the prime resource — a grove of sequoia trees.

As noted in the problem statement, preferred management techniques for the protection of the prime resource are not possible with present development locations. In addition to impacts on mature sequoia trees, the ability of the grove to perpetuate itself is hampered. Moving major development out of the Giant Forest is essential for preservation and future enjoyment of the giant sequoia grove for which the park was created. Upon relocation of development, much of the area will be returned to near natural conditions.

Three structures within Giant Forest — Cattle Cabin, Tharp's Log, and Squatter's Cabin — are on the National Register of Historic Places and will be preserved on site. The U.S. Army Campsite and the Moro Rock Trail, eligible for nomination to the National Register, will also be preserved. Two districts within Giant Forest have been nominated to the National Register because of local and regional significance in the fields of recreation history, architecture and landscape architecture. Three of the buildings within the districts, the Giant Forest Market, the adjacent comfort station, and the ranger residence will be retained and preserved. The market will be adaptively used as an information facility; the comfort station and ranger residence will continue to serve their present function.

At least three cabins, representative of the major development periods, will be preserved on site or relocated to a new site if further studies indicate that their preservation is feasible, and that they would serve an interpretive function. Should the study indicate that it is not feasible to preserve any of the cabins, the California State Historic Preservation Officer and the Advisory Council on Historic Preservation will be afforded the opportunity to comment prior to removal of the structures.

The remainder of the cabins and facilities will be preserved through filming the structures and their setting, and measuring and recording the buildings according to standards to be determined in consultation with the Historic American Buildings Survey. In addition to recording, the structures to be removed will be examined and evaluated for salvage of hardware and other materials that may be useful in repairing those to be retained or for interpretive uses. Some cabins may be moved to the new Clover Creek lodging area if economically feasible.

Archaeological resources will be preserved as is and interpreted where deemed appropriate by future research and planning. Those sites subject to impact from visitor use will be identified and protected in accordance with applicable professional standards.

All actions affecting cultural and archaeological resources will be conducted according to the procedures of the Advisory Council on Historic Preservation (36 CFR 800). See Memorandum of Agreement in the Final Environmental Statement.

To serve during the phase-out period, present sewage handling facilities will be upgraded to standards of secondary treatment. This is a mandatory action intended to comply with local, state, and federal health codes. It will also reduce resource degradation currently occurring on site.

During construction and removal activities, there will be considerable confusion to visitors in the Giant Forest. An information contact point for the duration of phase-out operations will be developed in conjunction with the historic market near the Sentinel Tree until such time as the market can be converted to an information function. The 55 parking spaces adjacent to the market will remain during the phase-out.

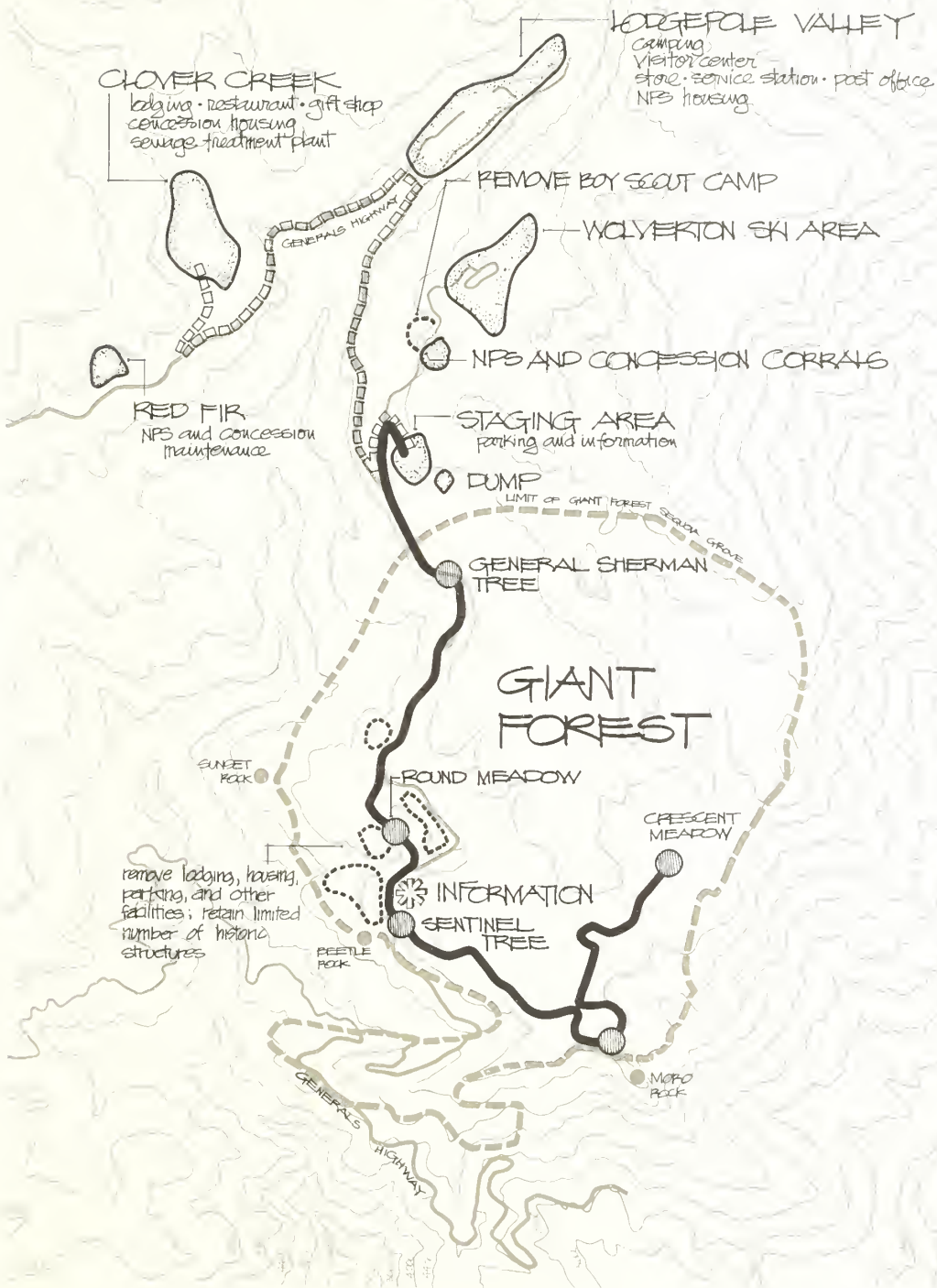
An information/parking structure (staging area) will be constructed at the site of the present Wolverton corrals (see following section). Here an overview of activities and interpretive opportunities in the study area, and also on adjacent U.S. Forest Service lands, will be presented. From the staging area, visitors may proceed into Giant Forest via an interpretive shuttle system for day use activities (hiking, photography, interpretive talks, self-guided tours, etc.) or to a trailhead for backcountry access (at Crescent Meadow). Stops will be provided at various points such as the General Sherman Tree, Round Meadow, Sentinel Tree, Moro Rock, and Crescent Meadow and possibly at other locations as determined by the interpretive program. The stops will contain interpretive facilities and comfort stations and will be designed to encourage visitors to experience the sequoia grove on

foot. Trails throughout Giant Forest will receive better signing and maintenance. The combination of the shuttle system, new information and interpretation facilities, and improved trails, along with the removal of distracting development and activities, will provide a more comprehensive and continuous interpretive experience for visitors.

The interpretive shuttle will operate throughout the summer season. The Generals Highway through Giant Forest will remain open, but visitors will not be permitted to park until they reach the staging area. The road to Crescent Meadow will be closed to private vehicles when the shuttle system is in operation. The shuttle will run frequently for maximum visitor convenience, will be designed for the use of handicapped visitors, and will have storage for carry-on baggage such as backpacks and other items. The shuttle will run primarily on existing roadways, with little new road construction required for implementation.

During the off-season, when the shuttle is not running, the road to Crescent Meadow will be open for private vehicle use when snow conditions allow, and parking will be allowed along the Generals Highway in Giant Forest, generally in the same areas as the summer shuttle stops and in the 55-space parking area adjacent to the market/information center.





# GIANT FOREST PROPOSAL

SEQUOIA & KINGS CANYON NATIONAL PARKS  
 UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

10000 FEET  
 0 1000

- Collector Shuttle
- Interpretive Shuttle
- Interpretive Shuttle Stop
- To Be Removed

## **WOLVERTON STAGING AREA**

The National Park Service and concessioner corrals, located on a spur off the Wolverton ski area access road, will be moved to a new location near the Boy Scout camp. In place of the corrals, a multilevel parking structure will be constructed with a maximum capacity of 1,700 vehicles. The facility, built in phases as demand warrants, will store vehicles of day users displaced from Giant Forest, Lodgepole, and trailhead parking. Along with the information function, the structure will have comfort stations and short-order food service facilities. The parking structure will require sensitive design to minimize visual impact. The natural slope of the site will be used to stagger levels. Materials and colors will be selected to blend the structure into the hillside and trees.

The staging area will serve as an interface for two types of transportation systems in the study area. It will be the origin of the interpretive shuttle into Giant Forest (see previous section). Visitors staying overnight in the area (campers and concession lodgers) will park at their overnight base. They will reach the staging area via a people-collector system that will link Clover Creek and Lodgepole with the former corral site. As with the interpretive shuttle, the collector system will run frequently, be adapted for handicapped visitors, have storage facilities for bulky items, and run primarily on existing roads. The aim of both transportation systems is reduction of vehicular congestion and traffic in Giant Forest and on the Generals Highway. A second goal of the transportation proposal is the reduction of parking areas in prime resource zones.

## **WOLVERTON BOY SCOUT CAMP**

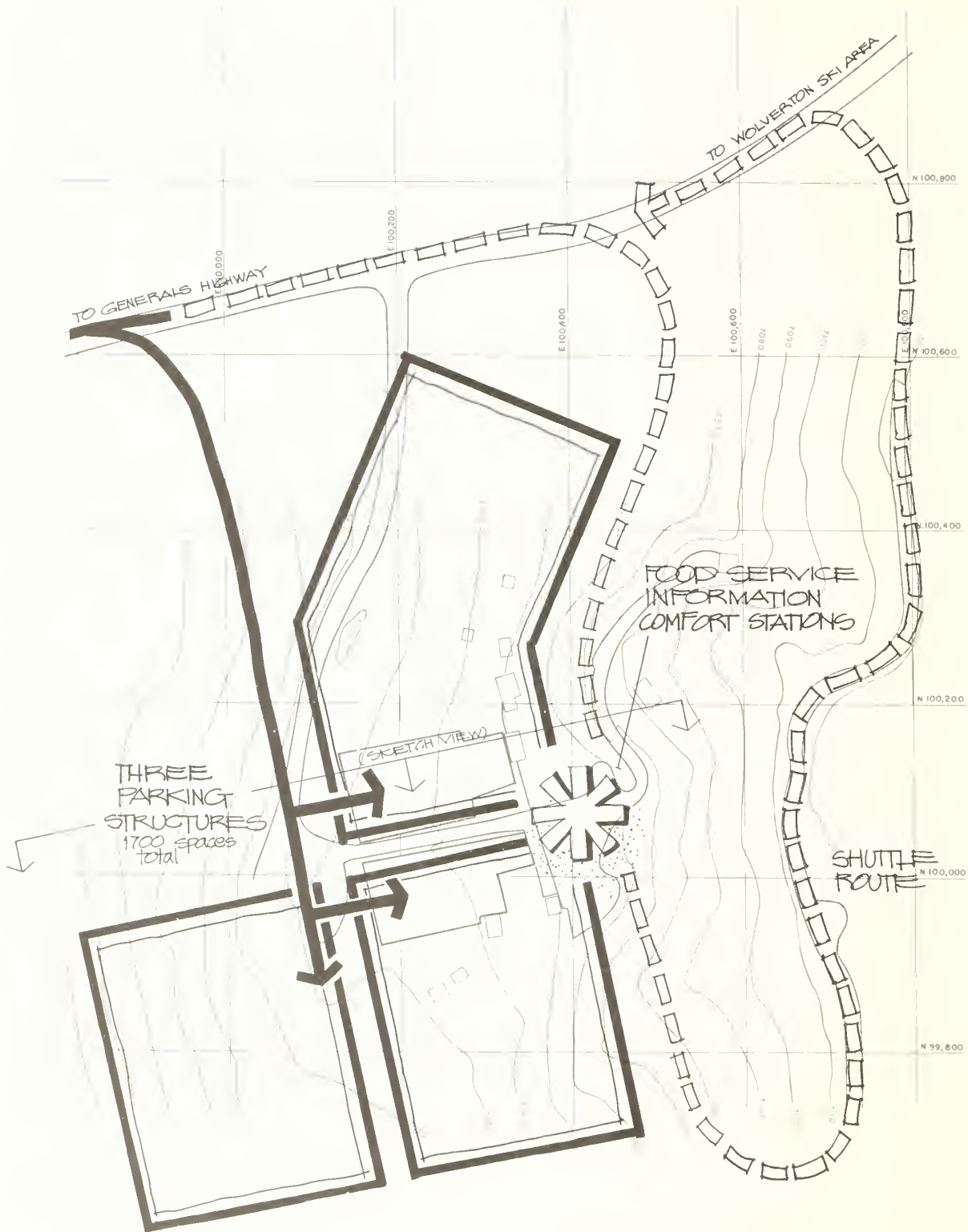
The Boy Scout camping area adjacent to the ski area access road will be removed; group campsites will be developed at Dorst Creek campground, in an area previously planned for expansion. The old site will be returned to natural conditions. The group camp annex site, across the road from the Boy Scout camp, will be used for the relocated corral functions.

## **WOLVERTON SKI AREA**

As described in the site analysis portion of this document, Wolverton ski area exists in a rather fragile environmental setting. Because of this, development

at this site will be stabilized at existing levels. Ski facilities will remain to encourage family-type skiing and snow play. Rope tows may be upgraded to another type of mechanical tow for reasons of safety and management efficiency. The existing parking area will continue to function as a limiting factor on use of the area during the winter season; the staging area and transportation system will not be operated in the winter months. Food and rental equipment will be provided during the winter season. Comfort stations will be converted to self-contained units and will be open year around.

In the summer season the area serves as a backcountry trailhead. Picnicking and day use interpretive activities will continue on site.



# WOLVERTON CORRALS

## DAY-USE STAGING AREA PROPOSAL

SEQUOIA<sup>3</sup> & KINGS CANYON NATIONAL PARKS  
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

PROPOSED ROAD  
EXISTING ROAD



0 80 FEET

102 | 40064A  
DEC | JAN 77





# WOLVERTON CORRALS

DAY USE STAGING AREA

SEQUOIA<sup>NM</sup> & KINGS CANYON NATIONAL PARKS

UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

## LODGEPOLE

Camping will remain the primary land use at Lodgepole with the number of sites fixed at current levels (260 sites). A redesign of camping zones in the valley is proposed. Campsites within 100 feet of the river will be removed to reduce bank erosion, to free this zone for the use and enjoyment of more visitors, and to avoid flood-prone areas. Camping in the upper end of the valley will be retained as walk-in sites, with the number of sites reduced from 93 to 51. Most of the existing large paved surface will be removed and the area redesigned to absorb camping for self-contained recreation vehicles, replacing those sites removed from the banks of the river. These actions will provide some flexibility to separate styles of camping — a desire expressed by the public through the visitor survey and at previous planning meetings on the project.

A camper store and registration facility will be located close to the entrance to the campground. The existing store will be removed. The visitor center, service station, and post office will remain in their present locations and be used year around. In the winter season, the recreation vehicle camping area will be open to all styles of camping.

An extensive landscaping, subsurface irrigation, and resource management program will be implemented throughout the valley. The goal of this continuing program will be to stabilize the declining mature lodgepole pine community, to increase vegetative screening between campsites, and to reduce stream bank erosion.

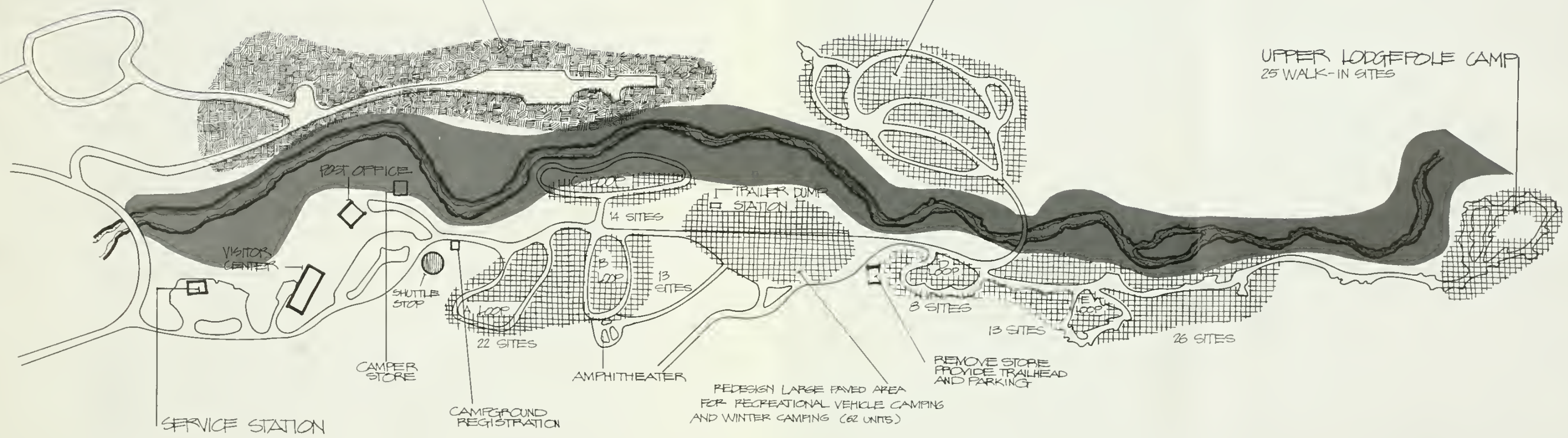
The existing National Park Service employee housing/maintenance area on the north side of the river will become the only Park Service housing area when present housing is phased out of other locations in the Giant Forest-Lodgepole area. The present maintenance functions will be relocated to Red Fir, freeing the maintenance facility sites for additional housing. The new housing units will replace obsolete housing at Lodgepole as well as provide for employees displaced from Giant Forest. A total of 40 single-family units and a 20- to 35-unit dormitory-apartment building will be required to serve future needs. Because development space is at a premium, the housing units will be clustered in "townhouse" style; some may be two-story units. Residences for year-round use will be sited for privacy as well as easy snow removal. Materials and colors will be selected to minimize visibility of the housing structures from the campground.



NPS HOUSING  
40 FAMILY UNITS  
20-30 UNIT DORMITORY /  
APARTMENT

LOG BRIDGE CAMP  
77 SITES

UPPER LODGEPOLE CAMP  
25 WALK-IN SITES



# LODGEPOLE VALLEY

## PROPOSAL

SEQUOIA & KINGS CANYON NATIONAL PARKS  
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

- CAMPING ZONE
- EXISTING ROAD
- FLOOD-PRONE ZONE



0 200 FEET

102-400400  
DEC 1 FEB 80

## CLOVER CREEK

The Clover Creek area will become the center for concession-operated visitor lodging and services displaced from Giant Forest. Approximately the same number of lodging units as at Giant Forest will be available to visitors – 1,240 pillows, the limit set in the statement for management.

Lodging will be available in several price ranges and a variety of types – simple shelters, low-cost dormitories, and standard lodging units, some with housekeeping facilities. Individual units will be arranged in clusters for management efficiency and to minimize construction costs. The clusters will be designed and sited to capitalize on the screening effects of vegetation, to minimize removal of trees, and to maximize individual privacy and awareness of the surrounding environment. Through sensitive siting of units, development will be absorbed into the environment rather than imposed upon it.

Small parking areas will be located near but separated visually from lodging clusters rather than next to the units as in a typical motel.

The exact siting of the units will require further study in later design phases. Vegetation patterns, rock outcroppings, and views into ravines will be used to provide variety and privacy for individual units.

Some of the units and the main lodge complex will be located on the open, sunny slopes at the edge of the dense forest, providing views of the high country. This zone will serve as the winter operations center.

A 30-bed hostel or dormitory will be incorporated into the lodge complex. The lodge complex will be designed for year-round operation; the higher density units will be designed for maximum energy conservation, operational efficiency, and varied price structure. Parking at the lodge complex will be concentrated in a series of central parking areas sited to allow easy snow removal. The lodge center will contain registration facilities for the cabins and lodge, dining and beverage services, a gift shop, and administrative offices. Although the main lodge will be a higher density structure, the low density cabin clusters and the basic shelter units along with the dense vegetation and the separation of sites by variation in topography will provide an opportunity to recreate the informal Giant Forest lodging experience in an appealing aesthetic environment.

Criteria for the design of the lodging facilities are illustrated in the following graphics. The number of units of various types has not been determined.



Further analysis during the comprehensive design phase will consider the following factors in determining the locations and types of units:

The visitor experience

Environmental disruption

Construction costs

Operation and maintenance cost

Cost to the visitor (varied price range)

Possible re-use of existing cabins and "motel" units from Giant Forest

Achieving access to the Clover Creek terraces will require construction of a 1-mile road, a third of it cutting across slopes with exposed granite bedrock. Elevation will be gained on the Generals Highway, and the road will parallel the natural contours into the site. Buildings and roads will be located to minimize removal of the younger, vigorous trees that are plentiful on the site.

Pedestrian circulation will be accomplished by the construction of trails for day use activities between the cabin clusters, the lodge, Clover Creek, and the slopes above the development zone.

Housing for concession and transit system employees will be constructed on one of the terraces, separated from the lodging units but within walking distance of their work sites. Dormitory, apartments, and single-family residences will require relatively high density development – possibly two stories or more – to minimize impact on the site.

Water for the new facilities will be drawn from the existing sources on Wolverton Creek when this supply is no longer needed for Giant Forest, and/or from additional sources such as Clover Creek, Silliman Creek, and the Marble Fork downstream from Lodgepole. Further studies will be conducted to determine the yield of the various streams and the amount of water that can be diverted without affecting the visual quality of the streams or the ecological balance of the surrounding environment. Well sources and the feasibility of withdrawing water from the Marble Fork downstream from the Lodgepole area will also be explored. A water treatment plant will probably be required to provide for future needs, but a site has not been selected pending the results of the above studies.

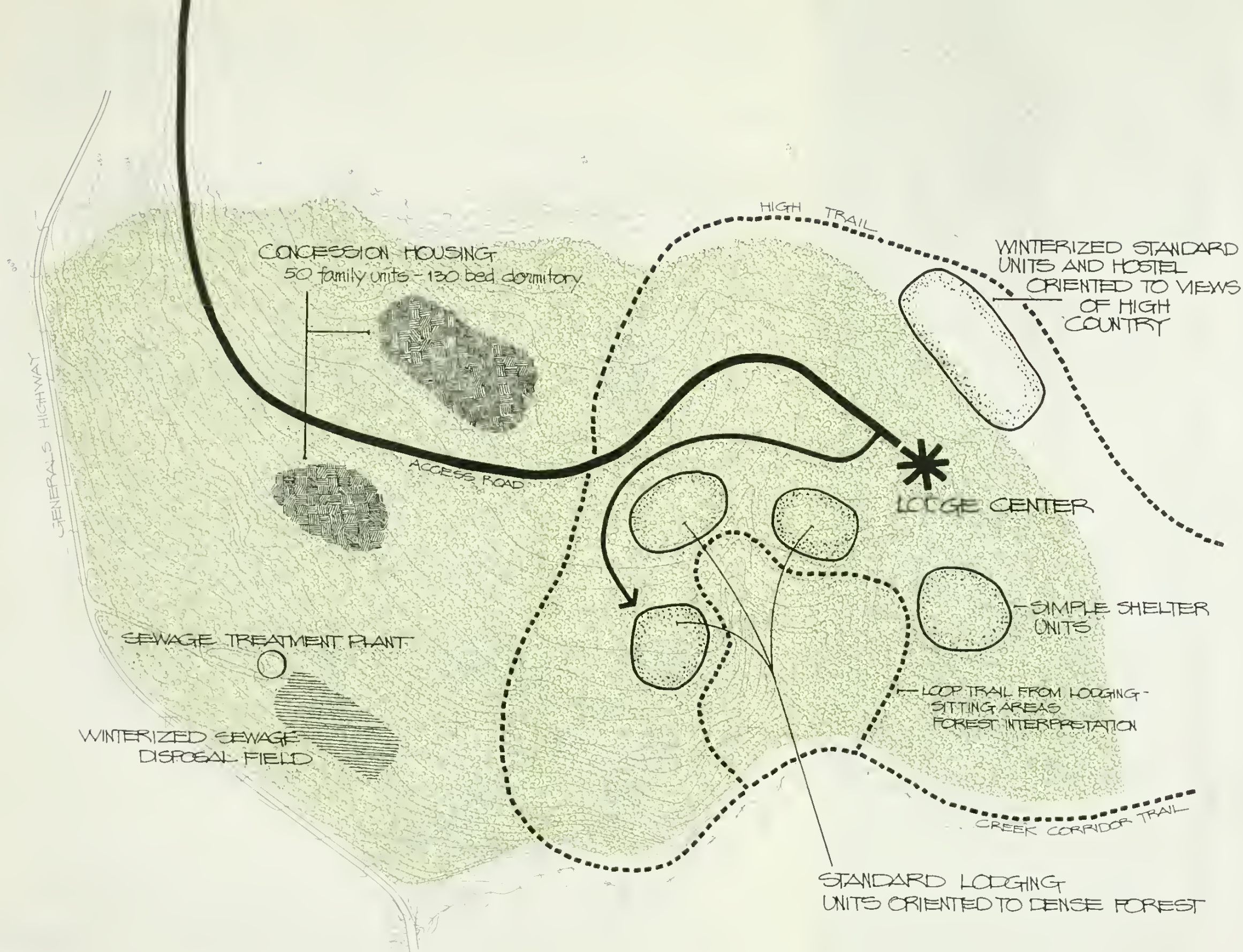
A sewage treatment plant to serve the Staging Area, Lodgepole, and Clover Creek (the move out of Giant Forest is accomplished) will be constructed in the Clover Creek area on the site of a former incinerator. The plant will be topographically separated from other development as well as being screened by vegetation. Disposal will be in a spray field near Red Fir; a subsurface disposal site adjacent to the treatment plant will be used during the winter season. Access to the treatment plant will be via an existing road. Further criteria for the treatment plant will be developed during the water studies. Existing sewage treatment systems at Lodgepole, Giant Forest, Wolverton and the Corrals will be phased out as the New Clover Creek plant becomes operational. Comfort stations at Wolverton and the Giant Forest will be converted to self-contained units with waste materials periodically transported to the Clover Creek plant for treatment.



# CLOVER CREEK

## PROPOSAL

SEQUOIA<sup>ND</sup> KINGS CANYON NATIONAL PARKS  
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE



### 1 OBJECTIVE

THE PRIMARY OBJECTIVE IN DEVELOPING THE CLOVER CREEK SITE WILL BE TO PROVIDE AN OVERNIGHT EXPERIENCE THAT WILL BE UNIQUE TO A NATIONAL PARK SETTING AND TO THE DISTINCTIVE CHARACTER OF THE CLOVER CREEK LOCATION, AND TO RECREATE THE INFORMAL, UNSTRUCTURED ATMOSPHERE INHERENT IN THE EXISTING GIANT FOREST LODGING DEVELOPMENT.

### 2 TYPES OF LODGING

THREE TYPES OF UNITS WILL OFFER CHOICES IN REGARD TO EXPERIENCES AND PRICES

#### A. SIMPLE SHELTER UNITS

THIS TYPE WILL EMPHASIZE A CLOSE RELATIONSHIP TO THE ENVIRONMENT. USE OF MATERIALS WILL ALLOW FOR MULTISENSORY LINKS WITH THE SURROUNDING FOREST AND WILL BE OFFERED AT A MODERATE COST TO VISITORS. THESE UNITS WILL BE USED IN THE SUMMER SEASON.

#### B. STANDARD LODGING UNITS

THIS TYPE WILL BE HIGHER PRICED AND WILL OFFER COMFORTS NORMALLY ASSOCIATED WITH CONVENTIONAL TYPES OF LODGING (E.G. PRIVATE BATH, TEMPERATURE CONTROL, MAXIMUM PRIVACY). SOME UNITS WILL BE WINTERIZED FOR YEAR-ROUND USE.

#### C. HOSTEL

THIS WILL PROVIDE SIMPLE DORMITORY-STYLE ROOMS WITH COMMON BATH FACILITIES FOR VISITORS REQUIRING LOW COST ACCOMMODATIONS. THESE UNITS WILL BE WINTERIZED FOR YEAR-ROUND USE.

### 3 DEVELOPMENT CONCEPT

LODGING WILL BE SITED TO CAPITALIZE ON TWO DISTINCT ENVIRONMENTS WITHIN THE CLOVER CREEK SITE:

- A. A COOL, DENSELY FORESTED AREA
- B. ON AN OPEN, SUNNY SLOPE WITH HIGH COUNTRY VIEWS.

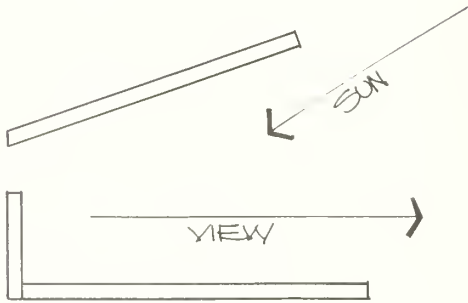
--- TRAIL  
— PROPOSED ROAD  
— EXISTING ROAD



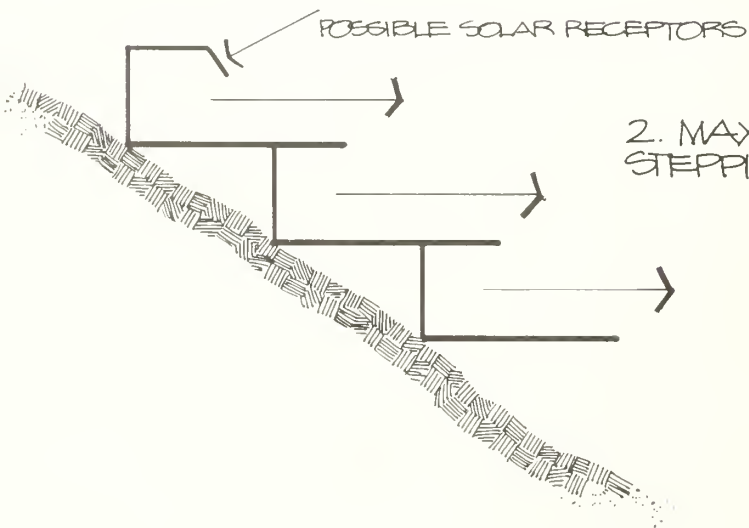
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## B. SPARSE FOREST ENVIRONMENT



1. UNITS ARRANGED TO FOCUS ON DISTANT VIEWS AND SUNLIGHT FOR SOLAR HEATING



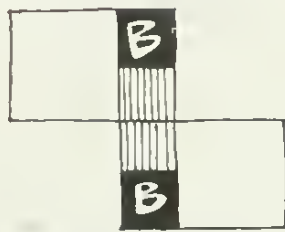
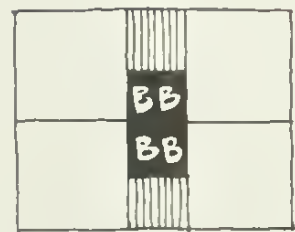
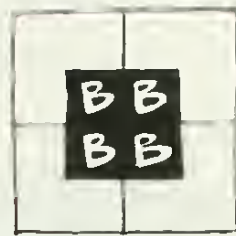
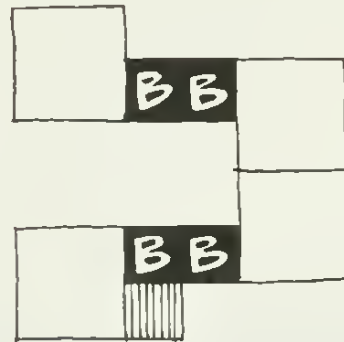
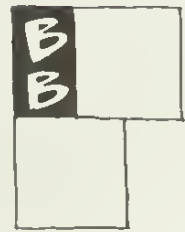
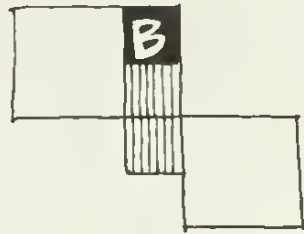
2. MAXIMIZE VIEWS BY STEPPING UNITS ON SLOPE

3. BECAUSE THERE IS MORE DIRECT SUNLIGHT AND LESS SNOW ACCUMULATION IN THIS ENVIRONMENT, UNITS WILL BE WINTERIZED AND LOCATED MORE DENSELY FOR ECONOMY AND ENERGY CONSERVATION



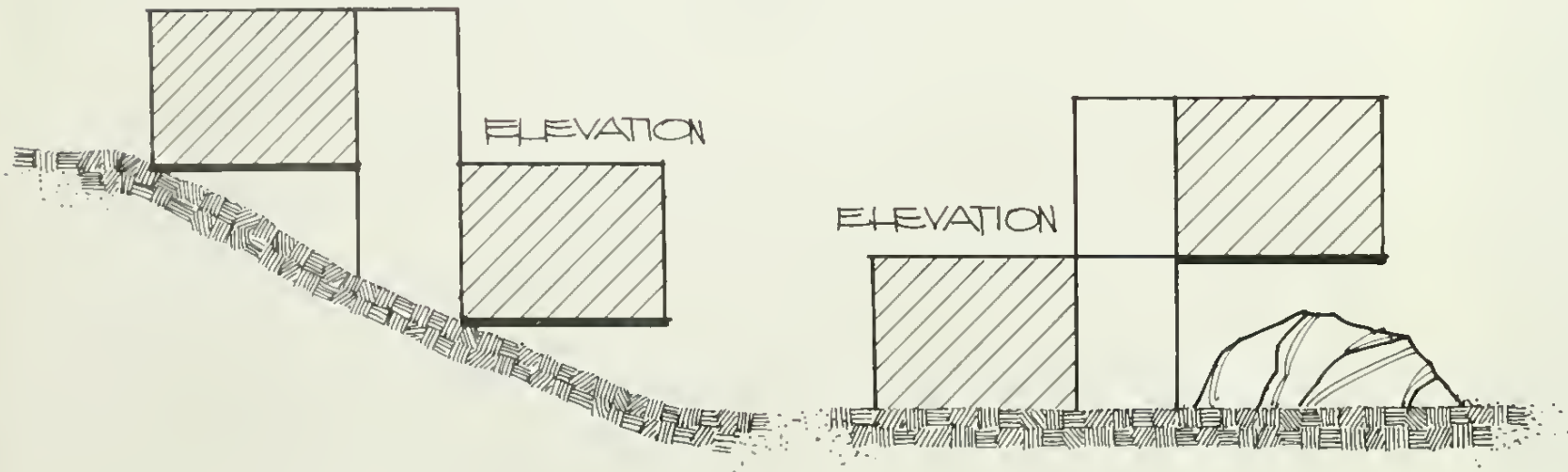
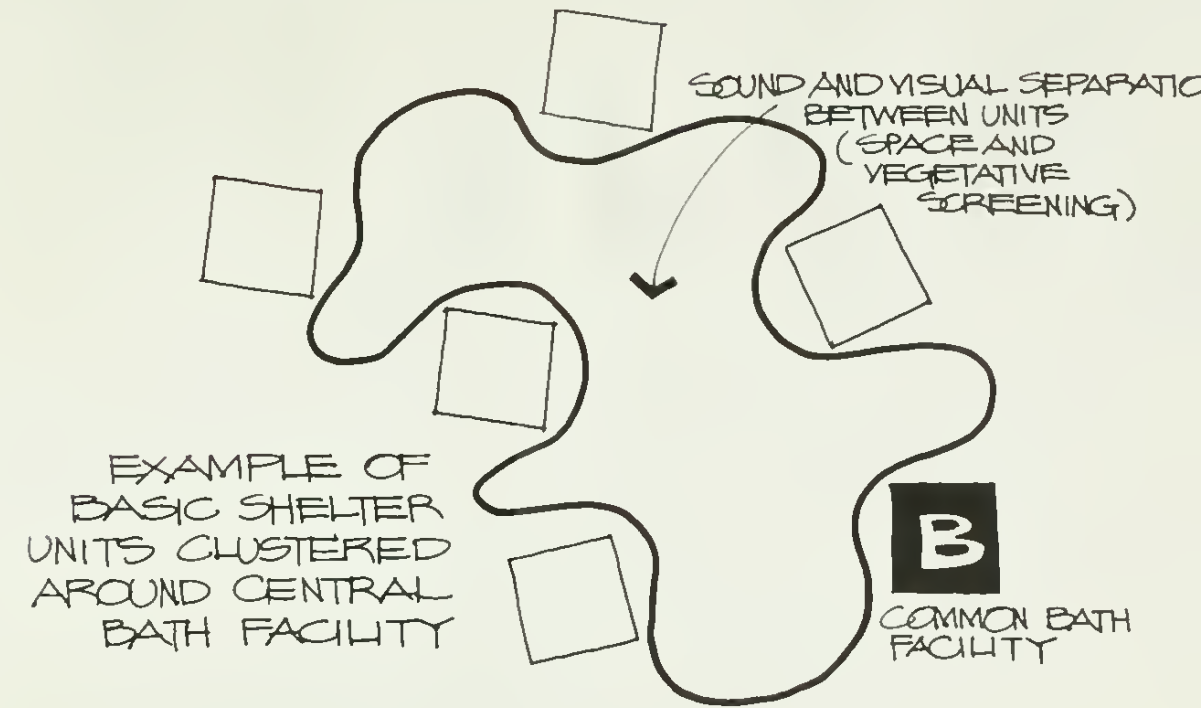
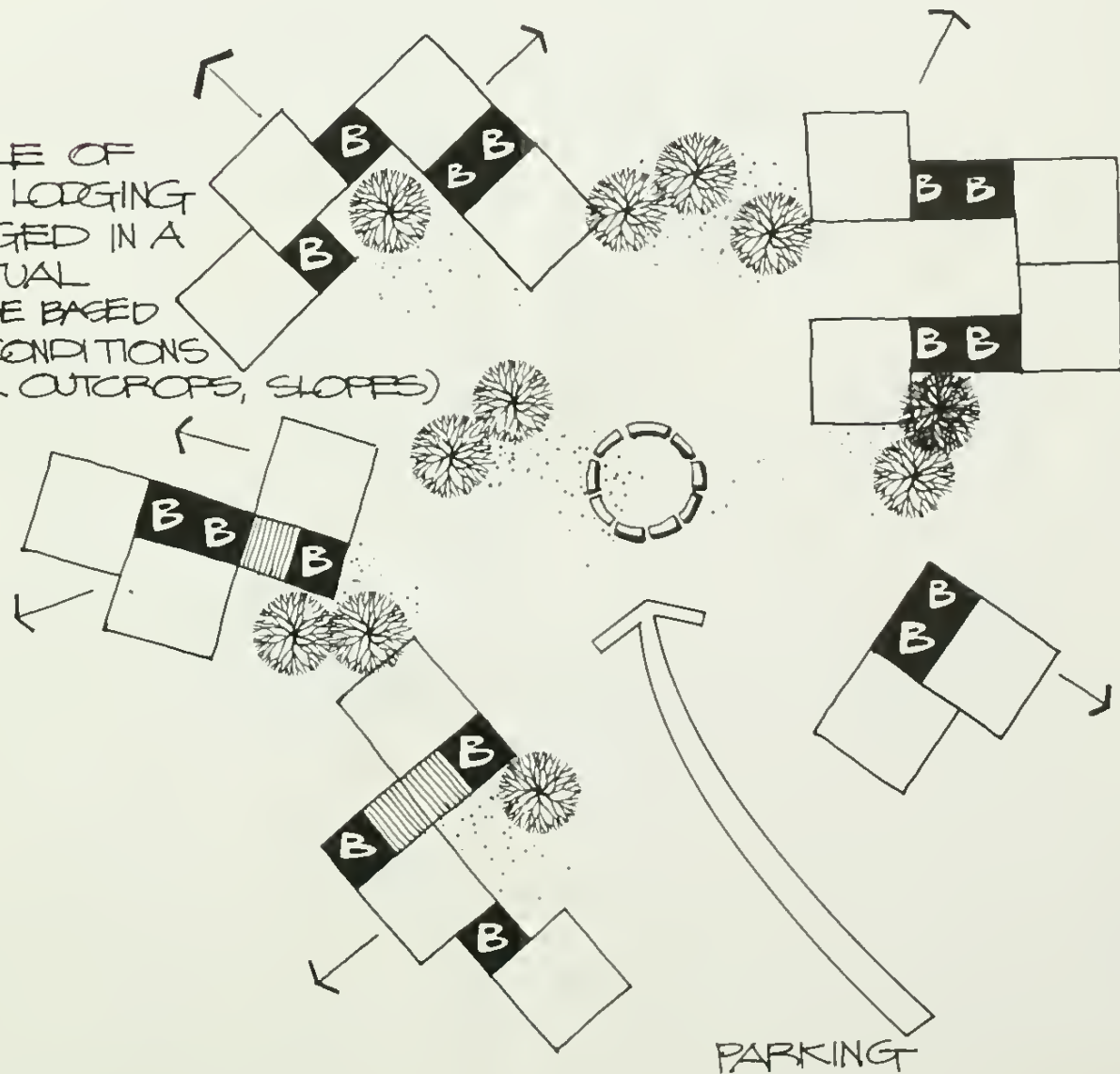
# POSSIBLE COMBINATIONS OF STANDARD LODGING UNITS

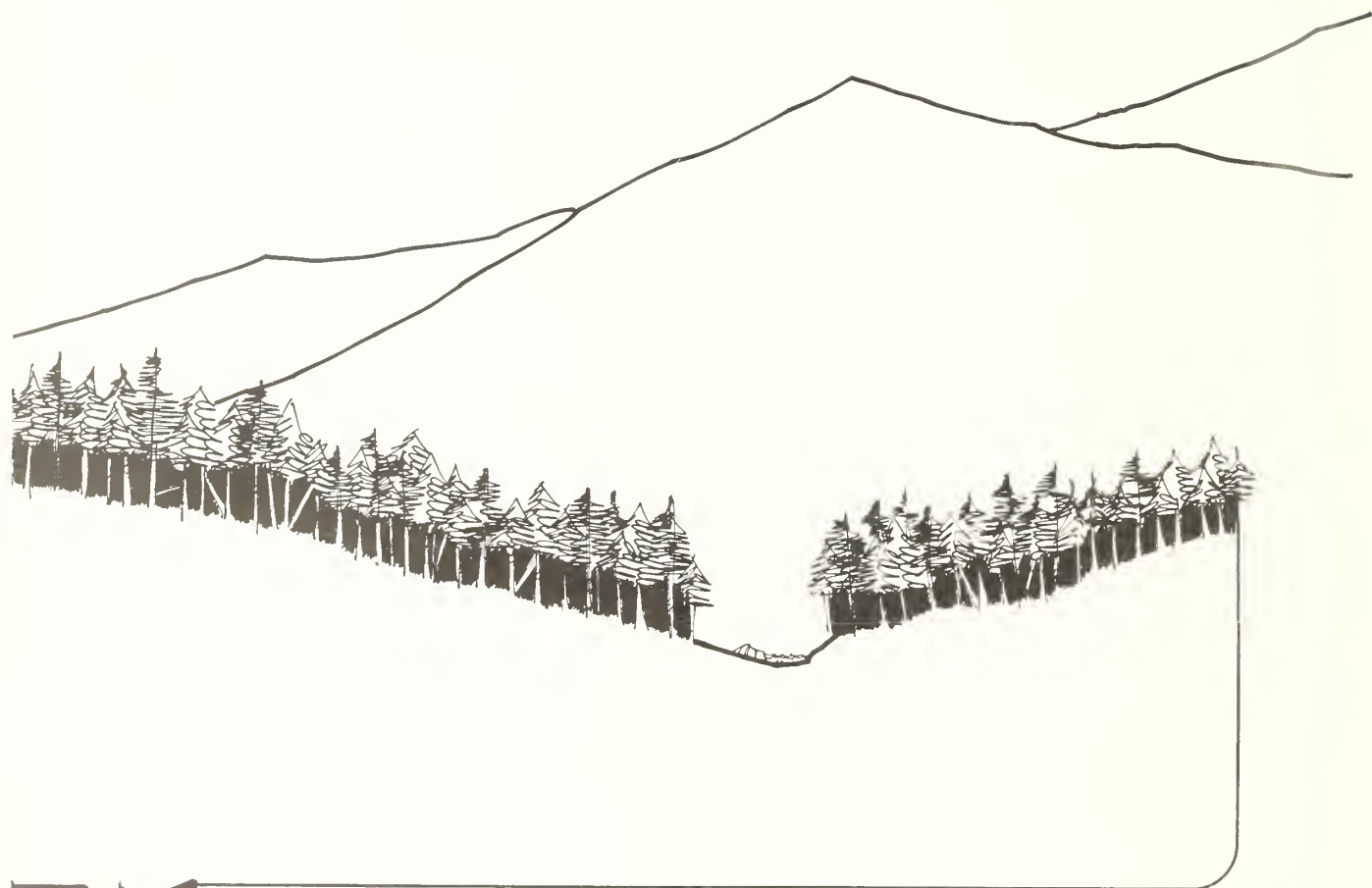
# CLUSTERING CONCEPTS



BATH  
B  
KITCHENETTE  
K

EXAMPLE OF STANDARD LODGING UNITS ARRANGED IN A CLUSTER (ACTUAL ARRANGEMENT WILL BE BASED ON SPECIFIC SITE CONDITIONS (TREE PATTERNS, ROCK OUTCROPS, SLOPES))





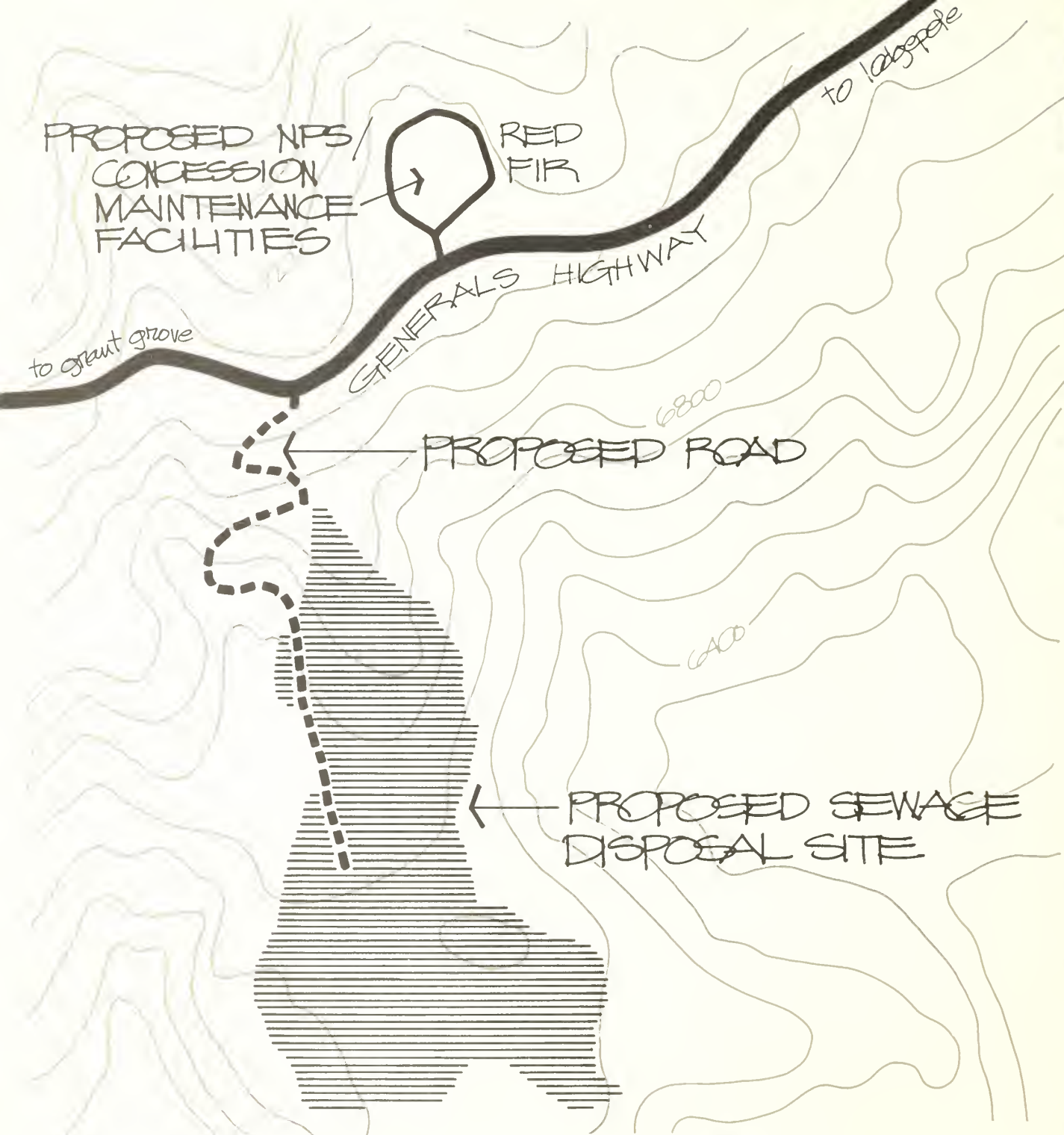
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## RED FIR

Red Fir was the location of a Civilian Conservation Corps camp during the 1930s. It is immediately adjacent to the Generals Highway about 2 miles north and west of Lodgepole (see graphic). Concession and National Park Service maintenance and warehousing operations, displaced from Giant Forest and Lodgepole, will be conducted at this site.

A previously undeveloped area southwest of the Red Fir maintenance site has been selected for spray field disposal of effluent from the wastewater treatment plant at Clover Creek. Treated effluent will be pumped from Clover Creek to Red Fir in the proposed pipeline constructed in the Generals Highway road shoulder. A mile of one-way service road will be constructed down to the site across steep terrain. The access corridor has been selected to minimize the road's visibility from the Generals Highway. Thinning operations will be conducted to accommodate the spray field, but there will be no appreciable change in the forest canopy as viewed from the Generals Highway. A monitoring study will be conducted to constantly assess changes in the natural system from effluent application.





# RED FIR - PROPOSAL

SEQUOIA & KINGS CANYON NATIONAL PARKS  
UNITED STATES DEPARTMENT OF THE INTERIOR / NATIONAL PARK SERVICE

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## VISITOR CAPACITY

At the present time there is no indicated need to establish day use capacities for the area. Winter use is moderate compared with summer use; parking at the ski area limits use of the facility. Winter use is expected to increase moderately with activities such as cross-country skiing and winter camping becoming more popular. There will be a slight increase in the number of winterized lodging units (the number to be determined during design phases) to accommodate increasing winter use and to provide an economically viable operation. Redesign of the Lodgepole campground will allow for the accommodation of additional winter campers.

A gradual increase in summer visitation is anticipated. The Generals Highway, a relatively slowroad, will eventually become the controlling factor in the number of visitors able to reach the area. This road has a practical capacity of 385-400 cars per hour leading into the proposed staging area from two directions. Unless major improvements are made, especially to the Ash Mountain-Giant Forest segment of the road, visitation cannot increase substantially. Peak use could spread out over more hours of the day rather than increase substantially during the present heavy use period at midday.

Overnight capacities have been established. While it is difficult to estimate changes in day use visitation patterns as a result of the staging area/transportation system concepts in this plan, preliminary analysis indicates that the average visit would remain at approximately the same level (3¼ hours) as today. However, the improved quality of the visitor experience may encourage the visitors to remain longer. The 1,700-car capacity of the parking structure should accommodate the number of arriving cars and allow for a 3- to 4-hour visit.

While the garage should be able to handle the cars, and the transportation system can be designed to carry the visitors, increased visitation could adversely affect the quality of the visitor experience as well as the resource itself. As the interpretive program is developed, the capacities of the various trails and waysides will be evaluated. These studies, along with transportation system and water studies, could lead to a determination of a day use capacity. The size of the parking structure and the design of the transportation system offer ways to regulate visitation in the Giant Forest area.

## PHASING / PRIORITIES

The following list indicates the priority of the development actions proposed for Giant Forest/Lodgepole:

1. Upgrading of Giant Forest sewage treatment
2. Complete water supply and sewage treatment studies
3. Construction of ultimate sewage treatment plant (Clover Creek) and disposal site (southwest of Red Fir); relocation of concession and National Park Service maintenance areas to Red Fir
4. Complete comprehensive design for Clover Creek development
5. Development of access road and utilities for Clover Creek
6. Upgrading of Lodgepole campgrounds, construction of Dorst Creek group campsites, and obliteration of Boy Scout camp
7. Upgrade Wolverton ski lifts
8. Relocation of facilities from Giant Forest to Clover Creek and Lodgepole
9. Stabilization of recording and removal of historic structures in Giant Forest; return of formerly disturbed areas to natural conditions
10. Implementation of transportation systems and staging area

Implementation of specific actions will occur in phases as development monies become available (numbers refer to priority list):

Phase 1: Actions necessary for health and safety reasons (1, 2, begin 3, 7)

Phase 2: Actions necessary to move out of Giant Forest (3, 4, 5, 8)

Phase 3: Actions necessary to implement transportation concepts (10)

Ongoing: Programs of resource management, maintenance (6, 7, 9)

Development will be phased over a 10-year period. A detailed development schedule and revised cost estimates will be prepared during the comprehensive design phase.

Several specific projects are required before the major proposals can be implemented. These projects would generally be programmed as part of the comprehensive design for specific projects but may occur independently.

1. Water supply analysis — establish minimum flow requirements for streams in study area — determine sources or source for potable water supply.
2. Transportation study — determine type and number of vehicles, schedules, phasing, and parking requirements.
3. Slope stability analysis — determine landslide potential in Lodgepole Valley prior to site selection for development.
4. Endangered species survey — determine whether or not such species exist in site specific project areas.
5. Archeological surveys — site specific surveys and clearance in project areas.
6. Economic feasibility and market analysis — determine feasibility of proposed concession development for development by private sector.
7. Historic preservation — initiate program to implement Memorandum of Agreement with the Advisory Council on Historic Preservation.
8. Monitoring program — design monitoring program to evaluate impacts of Red Fir disposal field on vegetation, watersheds, and streams.
9. Air quality — In cooperation with EPA, develop program to monitor air quality within the park.

## CONSTRUCTION COSTS — 1977 DOLLARS<sup>1</sup>

LODGEPOLE		
Campground improvements	\$ 1,120,000	
Camper store		\$ 112,000
National Park Service employee housing	1,520,000	
Sewer line to Clover Creek	224,000	
Water system	168,000	
Removal of obsolete facilities	80,000	
CLOVER CREEK		
Access road	560,000	
Lodging units and associated services		8,000,000
Sewage treatment plant and winter disposal	1,200,000	
Employee housing <sup>2</sup>		2,900,000
Sewer system and connections to plant	487,000	
Water system	722,000	
WOLVERTON SKI AREA		
Upgrade tows		112,000
Comfort station conversion	87,000	
WOLVERTON CORRALS		
Staging area	10,100,000	
Sewer line to Clover Creek	308,000	
RED FIR		
Maintenance area	390,000	
Sewage disposal area	185,000	
Effluent line (Clover Creek to Red Fir) and access road	907,000	
Comfort station	87,000	
Water system	70,000	
GIANT FOREST		
Interim sewage treatment improvements	560,000	
Removal of facilities	112,000	
Comfort station (3) conversions	162,000	
Shuttles and trams	670,000	
Convert market to information center	70,000	
Historic structures recording	35,000	
TOTALS		
National Park Service costs	\$19,824,000	
Concessioner-related costs		\$11,124,000
<b>TOTAL ALL COSTS</b>	<b>\$30,948,000</b>	

<sup>1</sup>Cost estimates are based on averages of construction costs for similar facilities in other National Park Service areas. These preliminary estimates do not include the cost of design, construction drawings, construction supervision, or financing (where applicable). Estimates will be revised as more specific information on individual projects is developed during the comprehensive design phase.

<sup>2</sup>Housing for transit system operators is not included.

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John Leasure and staff, Sequoia National Forest

**Private Organizations and Individuals**

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Theodore Osmundson and Associates  
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